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*Specification Accepted, 25th May, 1889*

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A.D. 1889, 19th MARCH. N° 4816.

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COMPLETE SPECIFICATION.

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Improvements in and relating to Catheters, Bougies, and like  
Surgical Instruments.

We, CHARLES ARTHUR CHAPMAN, of No. 8 Stock Orchard Street, Caledonian Road London, N. surgical Instrument maker, and EDWARD HALL GRIMWADE, of New Inn Yard, Tottenham Court Road, London, W.C. Wholesale Druggist, do hereby declare the nature of this invention and in what manner the same is to be performed, to be  
5 particularly described and ascertained in and by the following statement:—

Our invention has reference to and is based upon Patent No. 12577<sup>87</sup> for Improvements in Catheters granted to Charles Arthur Chapman, in which is described a catheter to the end of which is adapted a protective silver eye.

Our present invention relates to an improved method of forming the body of a  
10 catheter or like surgical instrument with a view to ensure its durability and increase its flexibility.

In accordance with our Invention we form the body of a catheter, bougie or like surgical instrument of a closely spirally wound wire—preferably of non-corrodible metal—to one end of which is secured, by any suitable means, the silver eye above  
15 referred to, and which is described in the Specification of Patent No. 12,577<sup>87</sup> as aforesaid. This highly elastic foundation is served or covered with woven linen thread, and is finally treated externally and internally with an elastic gum or equivalent to serve as a protective medium in the manner set out in the case of  
20 the catheters described in the Specification of the Invention of Charles Arthur Chapman No. 12577<sup>87</sup> above referred to.

In the accompanying drawings Figures 1 and 2 illustrate catheters constructed in accordance with our Invention, having modified forms of heads, Figure 3 being a view partly in section of a portion of a catheter drawn to enlarged scale, illustrative of our said improvements. Referring to Figure 3 the head or protective point A is  
25 formed with a suitably shaped eye or opening *a*. The foundation or body of the catheter consists of a spirally wound wire B or like suitable material to impart the required degree of flexibility, shown in section B<sup>1</sup>. Said spirally wound wire is covered with a strong linen thread C (preferably that known as Belfast linen thread) shown in section at C<sup>1</sup>.

[Price 6d.]

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*Chapman & Grimwade's Improvements in and relating to Catheters, Bougies, &c.*

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The catheter constructed as above is treated or coated externally and internally with a protective layer of elastic gum as illustrated respectively at D and E.

A catheter, bougie or like surgical instrument made up in the manner above described has among other important advantages, that of being more elastic, and less liable to damage arising to the coating or covering, by being bent or crushed, hence 5 the risk of the cracking and consequent disintegration of the protective medium is reduced to a minimum.

Having now particularly described and ascertained the nature of our said Invention and in what manner the same is to be performed we declare that what we claim is :— 10

In a catheter, bougie or like surgical instrument, the construction of the body of same, of a spirally wound wire, the whole being treated substantially as herein set forth and shown in the accompanying drawings.

Dated this 18th day of March 1889.

JAMES STEVENSON, 15  
Gray's Inn Chambers,  
20, High Holborn, London, W.C.,  
Agent for Applicants.

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(1 SHEET)

[This Drawing is a full-size reproduction of the Original.]

Fig: 1.

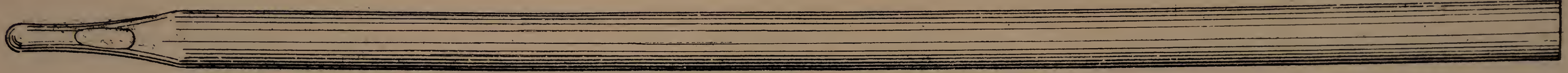


Fig: 2.

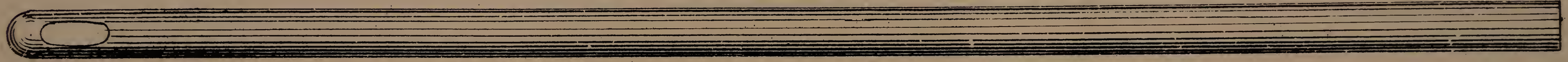


Fig: 3.

